REMARKS

This Amendment is submitted in reply to the First Office Action dated May 12, 2009. Applicant respectfully requests reconsideration and further examination of the patent application pursuant to 37 C.F.R. § 1.111.

Summary of the Examiner's Rejections

Claims 1-3, 11, 28-30 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Sorokuped, et al. (US 2005/0058161).

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Bovo, et al. (US 2003/0148755).

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Kavanagh (US 2003/0058161).

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Satt, et al. (US 2004/0248583).

Claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Satt, et al. (US 2004/0248583) and further in view of Bovo, et al. (US 2003/0148755).

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Satt, et al. (US 2004/0248583) and further in view of Kavanagh (US 2003/0058161).

Claim 9 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Miernik (US 7177641).

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Komandur, et al. (US 7327708).

Claims 12 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Jiang, et al. (US 2002/0044527).

Claims 13, 14, and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Chamaytelli, et al. (US 2002/0194325).

Claims 17 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Sen, et al. (US 6208620).

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Johnson, et al. (US 2003/0237016).

Claim 20 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Yokoyma, et al. (US 2004/0243715).

Claims 21-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Adam, et al. (US 0048259).

Claim 24-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorokopud, et al. (US 2005/0058161) in view of Snyder, et al. (US 2003/0134631) and further in view of Lau, et al. (US 7466652).

Summary of Amendments

Applicant has canceled claims 9 and 21 (without prejudice), amended claims 1, 28 and 30, and added new claim 31. The support for the amended claims 1, 28 and 30 can be found on page 7, lines 4-7, page 11, lines 25-27 and claims 9 and 21 in the originally filed patent application. The support for new claim 31 can be found on page 9, line 16-page 11, line 27 and claims 9 and 21 in the originally filed patent application. No new subject matter has been added.

Remarks regarding the §102(e) and §103(a) rejections

Applicant respectfully submits that Sorokuped, Bovo, Kavanagh, Satt, Bovo, Miernik, Komandur, Jiang, Chamaytelli, Sen, Johnson, Yokoyma, Adam, Snyder, Lau or any combination thereof fails to teach or suggest the present invention as recited in the amended independent Claim 1. The amended independent Claim 1 is as follows:

> 1. A method for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network comprising the steps of
> capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network;

building a traffic and session database by parsing through the traces in order to extract and correlate information about each and every user session and user transaction which happened during the measurement period;

defining a set of key performance indicators, KPI, to be used to characterize the performance of cells in terms of measurable parameters representative of user perceived end-to-end quality of service parameters; and

calculating the defined key performance indicators, wherein the step of calculating the key performance indicators is carried out by selecting a subset of the user transactions from the session and traffic database and obtaining a quality of service measure of the selected individual transactions (emphasis on main distinguishing limitation).

The teachings of the closest art Sorokopud differ significantly from the present invention recited in amended independent claim 1 which includes the limitations in original dependent claims 9 and 21 (now canceled). Sorokopud relates to equipment that is intended to support WAP transmissions. A GPRS monitor sends data relating to network traffic to a QoS server. The QoS server is responsible for sorting out WAP traffic by using a packet classifier 206 and traffic shaping 208 (see FIGURE 3A). However, Sorokopud does not disclose or teach the: (1) the building of a traffic and session database by parsing through the traces in order to extract and correlate information about each and every user session and user transaction which happened during the measurement period; (2) defining a set of key performance indicators to be used to characterize the performance of cells in terms of measurable parameters representative of user perceived end-to-end quality of service parameters; and (3) calculating the defined key performance indicators, wherein the step of calculating the key performance indicators is carried out by selecting a subset of the user transactions from the session and traffic database and obtaining a quality of service measure of the selected individual transactions. The Examiner cited Miernik in an attempt to teach the "building of the traffic and session database where the database contains information about each and every user session and user transaction which happened during the measurement period" (see page 8 in the Office Action). Plus, the Examiner cited Adam in an attempt to teach "calculating the performance indicators is carried out by selecting an appropriate subset of the transactions in the traffic database" (see page 13 in the Office Action).

However, Applicant submits that Sorokopud, Miernik, Adam or any combination thereof fail to teach the aforementioned combination of limitations in which KPI and the traffic and session database are used to monitor user perceived end-to-end performance on a cell level. As discussed above, the Examiner indicated that Sorokopud failed to teach the details about the traffic and session database and in an attempt to correct this defect cited Miernik. However, Miernik which relates to a system for identifying a wireless serving node for a mobile unit fails to disclose anything about building a traffic and session database that is used to monitor user perceived end-to-end performance on a cell level. In particular, Miernik fails to teach or suggest anything about building a traffic and session database that contains information related to user sessions and user transactions on a cell level. Instead, Miernik discloses a session database as follows:

FIG. 3 illustrates one embodiment of session database 96 for control node 64a. As illustrated, session database 96 includes columns 102. Column 102a includes the identifier for the mobile unit associated with a session. The identifier in column 102a may be an IMSI, an ESN, a MIN, or any other appropriate identifier for a mobile unit and/or subscriber. Column 102b includes an identifier for the serving node to which the mobile unit is anchored, and column 102c includes time information about the session, such as, for example, when the wireless session was established, how much time has elapsed since the wireless was established, and/or any other appropriate timing parameters of the wireless session. Accordingly, by searching column 102a, processor 92 may determine if one of serving nodes 61 is managing a wireless session associated with the registration request and, if so, an identifier for the serving node managing the wireless session.

Although FIG. 3 illustrates one embodiment of session database 96, other embodiments may have less, more, and/or a different arrangement of data. For example, in some embodiments, session database 96 may include a session identifier, which could be used locally to designate wireless sessions. As another example, in certain embodiments, session database 96 may include service and/or traffic management parameters for mobile units. As a further example, in particular embodiments, session database 96 may include session status indicators for each session. As still a further example, in some embodiments, the time data is not required.

(see col. 11, line 45- col. 12, line 5).

As can be seen, Miernik's session database contains the serving node's identifier to which the mobile unit is anchored. Miernik's session database does not contain any information about the particular cell in which the mobile unit is located. In fact, Miernik does not mention the word "cell". Adam has the same defect in that it fails to teach or suggest anything related to using key performance indicators and the traffic and session database to monitor user perceived end-to-end performance on a cell level. Instead, Adam discloses the following:

> Congestion within a communication is controlled by rate limiting packet transmissions over selected communication links within the network and modulating the rate limiting according to buffer occupancies at control nodes within the network. Preferably, though not necessarily, the rate limiting of the packet transmissions is performed at an aggregate level for all traffic streams utilizing the selected communication links. The rate limiting may also be performed dynamically in response to measured network performance metrics; such as the throughput of the selected communication links input to the control points and/or the buffer occupancy level at the control points. The network performance metrics may be measured according to at least one of: a moving average of the measured quantity, a standard average of the measured quantity, or another filtered average of the measured quantity. The rate limiting may be achieved by varying an inter-packet delay time over the selected communication links at the control points. The control points themselves may be located upstream or even downstream (or both) of congested nodes within the network and need only be located on only a few of a number of communication links that are coupled to a congested node within the network. More generally, the control points need only be associated with a fraction of the total number of traffic streams applied to a congested node within the network.

(see abstract)

Applicant submits that Adam does not teach or suggest anything related to "calculating the defined key performance indicators, wherein the step of calculating the key performance indicators is carried out by selecting a subset of the user transactions from the session and traffic database and obtaining a quality of service measure of the selected individual transactions". In particular, Adam does not teach or suggest anything related to calculating key performance indicators that are used to monitor user perceived end-to-end performance on a cell level. In fact, Adam does not mention the word "cell". Bovo, Kavanagh, Satt, Bovo, Komandur, Jiang, Chamaytelli, Sen, Johnson,

Yokoyma, Snyder, Lau do not cure any of the aforementioned defects. In view of at least the foregoing remarks, Applicant respectfully submits that amended independent Claim 1 is patentable over the aforementioned references and as such respectfully request the allowance of amended independent Claim 1 and its associated dependent Claims 2-8, 10-20 and 22-27.

Applicant respectfully submits that the amended independent claims 28 and 30 are patentable in view Sorokuped, Bovo, Kavanagh, Satt, Bovo, Miernik, Komandur, Jiang, Chamaytelli, Sen, Johnson, Yokoyma, Adam, Snyder, Lau or any combination thereof. The amended independent claims 28 and 30 recite the same distinguishing limitations that have been discussed above with respect to amended independent claim 1. As such, the aforementioned remarks regarding the patentability of amended independent claim 1 apply as well to the amended independent claims 28 and 30. Accordingly, Applicant respectfully submits that amended independent claims 28 and 30 and their associated dependent claim 29 are patentable view of the aforementioned references.

Remarks regarding the new independent claim 31

Applicant respectfully submits that new independent claim 31 is patentable over Sorokuped, Bovo, Kavanagh, Satt, Bovo, Miernik, Komandur, Jiang, Chamaytelli, Sen, Johnson, Yokoyma, Adam, Snyder, Lau or any combination thereof. The new independent claim 31 recites the following:

> 31. A method for performance management in a cellular mobile packet data network having a plurality of mobile stations linked to a plurality of base stations through a plurality of radio channels, the base stations being linked to a radio access network, and the radio access network being linked to a support node in a packet core network comprising the steps of
> capturing raw traffic traces over standardized interfaces of the operational cellular mobile data network;
> building a traffic and session database by parsing through the traces in order to extract and correlate all the information which is needed to the database, wherein the traffic and session database contains information about a plurality of user transactions which happened during a measurement period, wherein each user transaction is associated with a specific subscriber using captured session

management signaling, and each user transaction is associated with a cell
location using captured mobility management signaling;
defining a set of key performance indicators; and
calculating the set of key performance indicators using a subset of the
information in the traffic and session database to monitor user perceived end-to-
end performance on a cell level (emphasis on main distinguishing limitations).

The new claim 31 recites "building a traffic and session database...wherein the
traffic and session database contains information about a plurality of user transactions
which happened during a measurement period, wherein each user transaction is
associated with a specific subscriber using captured session management signaling,
and each user transaction is associated with a cell location using captured mobility
management signaling". The aforementioned references fail to teach or suggest the
limitation where the user transaction is associated with a subscriber and where the user
transaction is associated with a cell location. In addition, the new claim 31 recites
"calculating the set of key performance indicators using a subset of the information in
the traffic and session database to monitor user perceived end-to-end performance on a
cell level". The aforementioned references fail to teach or suggest this limitation where
key performance indicators and information from the traffic and session database are
used to monitor user perceived end-to-end performance on a cell level. Thus, Applicant
respectfully submits that new independent claim 31 is patentable over Sorokuped,
Bovo, Kavanagh, Satt, Bovo, Miernik, Komandur, Jiang, Chamaytelli, Sen, Johnson,
Yokoyma, Adam, Snyder, Lau or any combination.

CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently
pending in the Application to be in a condition for allowance. The Applicant, therefore,
respectfully requests that the Examiner withdraw all rejections and issue a Notice of
Allowance for all pending claims.

The Commissioner is hereby authorized to charge any fees for this paper and the
petition for extension of time to Deposit Account No. 50-1379.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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